# UCS B-Series Servers: Replacing a RAID Controller with older firmware may cause the data-store mount to failure in ESXi hosts

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### **Problem Statement:**

After the replacement of the RAID Controller the NAA id of the VD was changed during foreign configuration import and that caused the datastore mount to fail.

## **Affected Hardware:**

UCSB-MRAID12G

UCSC-MRAID12G

### Servers with UCSB-MRAID12G RAID Controllers

UCS B200 M4

UCS B200 M5 UCS B480 M5 UCS B420 M4

UCS C220 M4

UCS C240 M4

### **Affected Firmware:**

RAID Controller Firmware: 24.5.x.x and 24.6.x.x

### Example #

\*\*\*mrsasctlr.24.5.0-0043\_6.19.05.0\_NA.bin

24.5.x.x controller firmware is seen in all the UCSM releases prior to 3.2.\*

Release notes from 3.1 #

https://www.cisco.com/c/en/us/td/docs/unified\_computing/ucs/release/notes/CiscoUCSManag

1.htmlhttps://www.cisco.com/c/en/us/td/docs/unified\_computing/ucs/release/notes/CiscoUCS Manager-RB-3-1.html

## Affected OS:

VMware ESXi

### Cause:

With older firmware releases, if there is a DDF(Device Data Format) workspace version mismatch found, the controller FW is not able to restore the NAA ID from DDF during foreign import.

MR 6.4 has DDF\_WORK\_SPACE version 1, whereas MR 6.10 has DDF\_WORK\_SPACE version 3. Later releases of FW post-MR 6.4, fixes were made that allow the controller FW to restore NAA IDD from DDF even if a DDF workspace mismatch is found. NAA ID cannot be analyzed properly when the replacement controller Firmware is old(Example: 24.5.x and 24.6.x). However 24.12.x version can properly parse NAA ID.

### **Before Replacement:**

### Server 2/2:

Equipped Product Name: Cisco UCS B200 M5 2 Socket Blade Server Equipped PID: UCSB-B200-M5 Equipped VID: V06 Equipped Serial (SN): FCH222973K5 Slot Status: Equipped Acknowledged Product Name: Cisco UCS B200 M5 2 Socket Blade Server Acknowledged PID: UCSB-B200-M5 Acknowledged VID: V06 Acknowledged Serial (SN): FCH222973K5 Acknowledged Memory (MB): 524288 Acknowledged Effective Memory (MB): 524288 Acknowledged Cores: 28 Acknowledged Adapters: 1 Virtual Drive 0: Type: RAID 1 Mirrored Block Size: 512 Blocks: 1560545280 **Operability: Operable** Presence: Equipped Size: 761985 Lifecycle: Allocated Drive State: Optimal Strip Size (KB): 64 Access Policy: Read Write Read Policy: Normal Configured Write Cache Policy: Write Through Actual Write Cache Policy: Write Through **IO Policy: Direct** Drive Cache: No Change **Bootable: True** Unique Identifier: bcc0dd21-2006-4189-86c1-132017ad0958 Vendor Unique Identifier: 618e7283-72eb-6460-240f-d02c0bbd9310 <<<<<<<<<< Equipped Product Name: Cisco UCS B200 M5 2 Socket Blade Server Equipped PID: UCSB-B200-M5 Equipped VID: V06 Equipped Serial (SN): FCH222973K5 Slot Status: Equipped Acknowledged Product Name: Cisco UCS B200 M5 2 Socket Blade Server Acknowledged PID: UCSB-B200-M5 Acknowledged VID: V06 Acknowledged Serial (SN): FCH222973K5 Acknowledged Memory (MB): 524288 Acknowledged Effective Memory (MB): 524288 Acknowledged Cores: 28 Acknowledged Adapters: 1 Virtual Drive 0: Type: RAID 1 Mirrored Block Size: 512 Blocks: 1560545280 **Operability: Operable** Presence: Equipped Size: 761985 Lifecycle: Allocated Drive State: Optimal Strip Size (KB): 64 Access Policy: Read Write Read Policy: Normal Configured Write Cache Policy: Write Through Actual Write Cache Policy: Write Through **IO Policy: Direct** Drive Cache: No Change Bootable: True Unique Identifier: 7a894b44-721a-41ae-a3bf-380102b9e64e 

In this case [Vendor Unique Identifier] id of server 2/2 got changed from [618e7283-72eb-6460-240fd02c0bbd9310] to [618e7283-72ea-3f20-ff00-005a0574b04b]

### How to prevent hitting the issue?

This problem can be avoided by updating the firmware of the replacement controller before inserting the VD / disk.

#### Detailed steps:

- 1. Shutdown the server
- 2. Remove all the disk one by one & leave disks the same slot not fully inserted so that their placement order isn't disturbed(If fully removing out of the slot, please keep a **note of the slot** as drives have to be placed back in the same slot)
- 3. Install a new RAID controller for replacement without inserting a disk.
- 4. The server will recognize the new RAID controller
- 5. Update the firmware of the Raid controller.
- 6. Post successful firmware upgrade, power off the server & insert the disk into the server.
- 7. Now power on the server

## How to recover if the server is hit with this issue?

Detailed steps:

Procedure to restore datastore

1 Log in to the vSphere Client and select the server from the inventory panel.

2 Click the Configuration tab and click Storage in the Hardware panel.

Getting Started Summary Virtual Mach	ines Resource Allocat	ion Performance	Configuration T	sks & Events Alarma	Permissional Ma	DB Storage Views	Hardware Status
The ESXI host does not have To run virtual machines, create at least one Note: If you plan to use IGCSI or a network To add storage now, click hereto create a	persistent stora datastore for maintaining file system (VPS), ensure a datastore	ge. y virtual machines and that your storage an	d other system files. dapters and network	connections are properly	configured before co	minung.	
Hardware	View: Datastore	Devices					
Processors	Datastores						
Memory	Identification	<ul> <li>Ratus</li> </ul>	Device	Drive Type	Capacity	Free Type	Last Update
<ul> <li>Storage</li> </ul>							
Networking							
Storage Adapters							
Network Adapters							
Advanced Settings							
Power Management							
Software							
Licensed Features							
Time Configuration							
DNS and Routing							
Authentication Services							
Power Management							
Virtual Machine Startup/Shutdown							
Versual Machine Swapme Location	<b>Datastore Details</b>						
Inst Carbo Conformation							
System Resource Allocation							
Agent VM Settings							
Advanced Settings							

3 Click Add Storage.

4 Select the Disk/LUN storage type and click Next.

🕜 Add Storage	
Select Storage Type Specify if you want to forma	at a new volume or use a shared folder over the network.
Disk/LUN Select Disk/LUN File System Version Current Disk Layout Properties Formatting Ready to Complete	Storage Type
Help	< Back Next > Cancel

#### 5 From the list of LUNs, select the LUN that has a datastore name displayed in the VMFS Label column and click Next.

**Note**: The name present in the VMFS Label column indicates that the LUN is a copy that contains a copy of an existing VMFS datastore.

Add Storage					- 0
Select Disk/LUN					
Select a LUN to create a data	astore or expand the current one				
C Del UN					
Select Disk/LUN		Name, Identifier, F	Path ID, LUN, Capacity, E	xpandable or VMPS Label contains:	• Clear
File System Version	Name	Path ID	LUN / Drive Type	Capacity VMPS Label	Hardware Acceleration
Properties	Local LSI Disk (naa.600605b006b49	vmhba2:C2:T0:L0	0 Non-SSD	278.88 GB datastore1(	Not supported
Formatting					
Ready to Complete					
	1				
Help				< Back	Next > Cancel
					la la

6 Under Mount Options, these options are displayed:

**Keep Existing Signature**: Persistently mount the LUN (for example, mount LUN across reboots)

Assign a New Signature: Resignature the LUN

Format the disk: Reformat the LUN

**Notes:** Format the diskoption deletes any existing data on the LUN. Before attempting to resignature, ensure that there are no virtual machines running off that VMFS volume on any other host, as those virtual machines become invalid in the vCenter Server inventory and they are to be registered again on their respective hosts.

select Assign a New Signature and click Next.

Add Storage	
Select VHFS Hount Option Specify if you want to mo	ant the detected VMPS volume with the existing signature, use a new signature, or format the disk
CoskLun Select DiskLun Hount Options Ready to Complete	Specify a VMPS mount option: Keep the existing signature Mount the VMPS volume without changing the signature. Assign a new signature Retain the existing data and mount the VMPS volume present on the disk. Format the disk Create a new datastore.
946	<u>≤</u> Back Next <u>≥</u> Cancel

7 Select the desired option for your volume

8 In the Ready to Complete page, review the datastore configuration information and click Finish.

Review the disk layout	and click Pinish to add storage		
DIRALIN	Disk layout:		
incary or complete	Device Local LSI Disk (naa.600605b006b497b0ff000020021141d1) Location /vmfs/devices/disks/naa.600605b006b497b0ff000020021141d1 PartBon Format Unknown	Drive Type Capacity Non-SSD 278.88 G8	UN O
	Primary Partitions Legacy MBR (Local LSI Disk (na Legacy MBR (Local LSI Disk (na Legacy MBR (Local LSI Disk (na VMware Diagnostic (Local LSI Di. Legacy MBR (Local LSI Disk (na VMware Diagnostic (Local LSI Di. Legacy MBR (Local LSI Disk (na	Copadity 4,00 MB 250.00 MB 250.00 MB 110.00 MB 2346.00 MB 2.50 GB 4.00 GB	
	File system: Properties Extents		
	Detastore name: Formatting File system: Block size: Maximum file size: Signature Original ULID: 020000000000505550005-49750ff00 Assign new UUD: No Format Disk: No		

After resignaturing, you might have to do the following:



2 Right-click the datastore and click "Browse Datastore "

File	Edit	View	In	ventory	Admin	istration	Plug-ins	Help	
			٩	Home	۵	Inventor	y Þ	Datastores	
- 6	) #	FUR:	RS	SPS2S					
		Pun2 Local	DSt	ore on	13				Co
	Ĩ	MS-AS	S-St	ore1	Brown	e Datasto	10		
	9	LA LA IL			Alarm	c parasto	C.I.I.		,
					Renam	ne			
					Delete				
					Open	in New Wi	ndow	Ctrl+Alt+N	
					Refres	sh			

 $\ensuremath{\mathsf{3}}$  On the left pane, click a VM folder to display the contents on the right pane

🛃 Da	tasto	e Brov	vser -	(HS-/	S-Sto	re1]					_ 🗆 🗵
6	B	ø	Ø			×	0				
Folde	rs   Se	rch					[HS-AS-Store1]	<b></b>			
E	i					-1	Name	Size	Туре	Path	Mo 🔺
1	01	so					DBPDDADC34.vmx	4.11 KB	Virtual Machine	[MS-AS-Store1] DBPDDADC34	9/1
	2	S-MS-5	T-Cler	t2008		- 1	DBPDDADC34.vmf	0.26 KB	File	[MS-AS-Store1] DBPDDADC34	9/1
	-24	6PDDA	DC34				DBPDDADC34.vmsd	0.00 KB	File	[MS-AS-Store1] DBPDDADC34	9/1

4 On the right pane, right-click the .vmx file and select "Add to Inventory"

Dal	asto	re Brov	rser -	[HS-/	S-Sto	re1]						_ 🗆 🗙
8	B	D		Ø		×	0					
Folder	s   Se	arch					HS-AS-	Store1] DBPDDADC34				
ΒC	1					- 1	Name		Size	Type	Path	Mo 🔺
	0	ISO				- 11	8-2	B00010734	4.11 KB	Virtual Machine	[MS-AS-Store1] DBPDDADC34	9/1
	2	AS-MS-5	T-Cle	nt2008		- 11		Add to Inventory	0.26 KB	File	[MS-AS-Store1] DBPDDADC34	9/1
	2	DEPDDA	DC34			- 11		Go to Forger	0.00 KB	File	[MS-AS-Store1] DBPDDADC34	9/1
		DEPOAD	C35				-		10.742.180.00 K	Virtual Disk	IMS-AS-Spore11DBPDDADC34	9/1

5 Walkthrough the "Add to Inventory" wizard to complete adding the VM to the ESXi host

#### 6 Repeat steps for all remaining VMs

7 Once all VMs have been re-registered, remove all Inaccessible VMs from inventory by right-clicking on each one and selecting "Remove from Inventory"

Test S		Power	
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portal		Snapshot	•
portal portal	2	Open Console	
New Datacent	₿	Edit Settings	
		Migrate	
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		Template	٠
		Fault Tolerance	۲
		Add Permission Ctrl+P	
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Name		P	
Power Off virtual ma		Kename	
Power On virtual ma		Open in New Window Ctrl+Alt+N	
Initialize powering 0		Remove from Inventory	
Tasks 🞯 Alarms		Delete from Disk	

8 Power on each VM and verify it's operational and accessible

Note: Before powering on the VM, reboot the ESXi host and after it's come back online and accessible via vSphere client, confirm VMs are still visible and have not gone to "Inaccessible" state

## Related BUG: CSCvr11972

CSCvr11972 Vendor Unique Identifier changed after replacing MRAID12G

https://bst.cloudapps.cisco.com/bugsearch/bug/CSCvr11972